D-Link®
Building Networks for People

Manual
Version 1.0

DWL-G680

High-Powered Wireless 108G Notebook Adapter

Table of Contents

Package Contents

- **D-Link DWL-G680**
  High-Powered Wireless 108G Notebook Adapter

- Manual, Drivers, and Utility on CD

- Printed Quick Installation Guide

If any of the above items are missing, please contact your reseller.

Minimum System Requirements

- A laptop with an available 32-bit Cardbus slot

- Windows XP/2000

- At least 64MB of memory and a 500MHz processor

- An 802.11g or 802.11b access point (for Infrastructure mode), or another 802.11g or 802.11b wireless adapter (for Ad-Hoc, Peer-to-Peer networking mode.)

Introduction

D-Link's *Air*Premier® line of networking products combine powerful business class features with a high-performance hardware platform specifically designed for corporate environments. The *Air*Premier® line of networking products now adds wireless client adapters to its lineup including the DWL-G680 High-Powered Wireless 108G Notebook Adapter.

Powered by D-Link 108G Technology, this High-Powered Notebook Adapter is capable of delivering a maximum wireless signal rate of up to 108Mbps* when used with other D-Link Wireless 108G devices. The DWL-G680 is also backward compatible with virtually all 802.11b/g networks and devices.

The high-powered output featured on the DWL-G680 offers extended wireless signal reception while adhering to industry standards. Higher output power allows this client device to receive and maintain strong signals from wireless routers and access points at further distances – this translates into more useable, real-world throughput from virtually anywhere in your wireless network.

The new business-class wireless LAN utility included with this device is capable of storing multiple SSIDs per profile. What this means to the notebook user is a hassle-free and automatic process when transitioning between or changing networks. Each time a user enters an area under a different SSID, the notebook adapter will automatically connect to the respective SSID to ensure a positive roaming experience. IT managers will also appreciate the Silent Installation feature of the DWL-G680. With this feature, the drivers can be configured to automatically install on the backend reducing the time needed to process and configure wireless network settings.

For accessing secure networks, this Wireless Notebook Adapter supports both Personal and Enterprise versions of WPA and WPA2. Now you can utilize EAP-TLS, EAP-TTLS and PEAP for secure user authentication through an 802.1x RADIUS server. Data traversing the wireless network is encrypted using either TKIP or AES.

The DWL-G680 can be used in peer-to-peer mode (ad-hoc) to directly connect to other 802.11b/g wirelessly enabled computers for direct file sharing, or in client mode (infrastructure) to connect with wireless access points or routers.

In addition to Wi-Fi certification for 802.11b and 11g, the DWL-G680 is also certified by Microsoft's WHQL, to ensure compatibly with Microsoft Windows® XP and 2000. These certifications ensure both wireless compatibility, robust data encryption, and reliable performance. A perfect complement for your *Air*Premier wireless network, this High-Powered Wireless 108G Notebook Adapter is a convenient solution for providing superior wireless connectivity for your notebook PC.

*Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and evironmental factors lower actual data throughput rate.

Features and Benefits

- **Provides maximum wireless signal rate of up to 108Mbps***

- **Fully 802.11b/802.11g compatible**.

- **Better Security with WPA/WPA2 -** In addition to 64-,128, 152-bit WEP encryption, you can also securely connect to a wireless network using WPA and WPA2.

- **High-Powered output for greater signal reception.**

- **Supports Infrastructure networks via an access point and Peer-to-Peer communication in Ad-Hoc mode**.

- **New business-class WLAN utility including multiple SSID profile log and silent installation configuration feature.**

- **Wi-Fi 802.11b and 802.11g, and Microsoft WHQL Certified.**

Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.

Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. D-Link wireless products will allow you access to the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking brings.

A wireless local area network (WLAN) is a computer network that transmits and receives data with radio signals instead of wires. WLANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial to many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

People use WLAN technology for many different purposes:

Mobility - Productivity increases when people have access to data in any location within the operating range of the WLAN. Management decisions based on real-time information can significantly improve worker efficiency.

Low Implementation Costs - WLANs are easy to set up, manage, change and relocate. Networks that frequently change can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

Installation and Network Expansion - Installing a WLAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings. Wireless technology allows the network to go where wires cannot go - even outside the home or office.

Inexpensive Solution - Wireless network devices are as competitively priced as conventional Ethernet network devices.

Scalability - WLANs can be configured in a variety of ways to meet the needs of specific applications and installations. Configurations are easily changed and range from Peer-to-Peer networks suitable for a small number of users to larger Infrastructure networks to accommodate hundreds or thousands of users, depending on the number of wireless devices deployed.

Standards-Based Technology

The DWL-G680 Wireless 108G Notebook Adaper utilizes the **802.11g** standard.

The IEEE **802.11g** standard is an extension of the 802.11b standard. It increases the data rate up to 54Mbps within the 2.4GHz band, utilizing **OFDM technology.**

This means that in most environments, within the specified range of this device, you will be able to transfer large files quickly or even watch a movie in MPEG format over your network without noticeable delays. This technology works by transmitting high-speed digital data over a radio wave utilizing **OFDM** (**O**rthogonal **F**requency **D**ivision **M**ultiplexing) technology. **OFDM** works by splitting the radio signal into multiple smaller sub-signals that are then transmitted simultaneously at different frequencies to the receiver. **OFDM** reduces the amount of **crosstalk** (interference) in signal transmissions. The D-Link DWL-G680 will automatically sense the best possible connection speed to ensure the greatest speed and range possible.

802.11g offers the most advanced network security features available today, including: WPA , 802.1x, TKIP, AES and Pre-Shared Key mode. These security features are explained in more detail in the *Introduction* section of this manual.

The DWL-G680 is backwards compatible with 802.11b devices. This means that if you have an existing 802.11b network, the devices in that network will be compatible with 802.11g devices at speeds up to 11Mbps in the 2.4GHz range. Also based on the IEEE **802.11b** standard, the DWL-G680 is interoperable with existing compatible 2.4GHz wireless technology with data transfer speeds of up to 11Mbps.

Installation Considerations

The DWL-G680 lets you access your network using a wireless connection from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

■ Keep the number of walls and ceilings between the DWL-G680 and other network devices to a minimum - each wall or ceiling can reduce your DWL-G680's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

■ Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

■ Building materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.

■ Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

Getting Started

There are basically two modes of networking:

Infrastructure – using an access point or router, such as the DI-624.

Ad-Hoc – directly connecting to another computer, for Peer-to-Peer communication, using wireless network adapters on each computer, such as two or more DWL-G680 Wireless Laptop adapters.

On the following pages we will show you an example of an **Infrastructure Network** and an **Ad-Hoc Network**.

An **Infrastructure** network contains an access point or router.
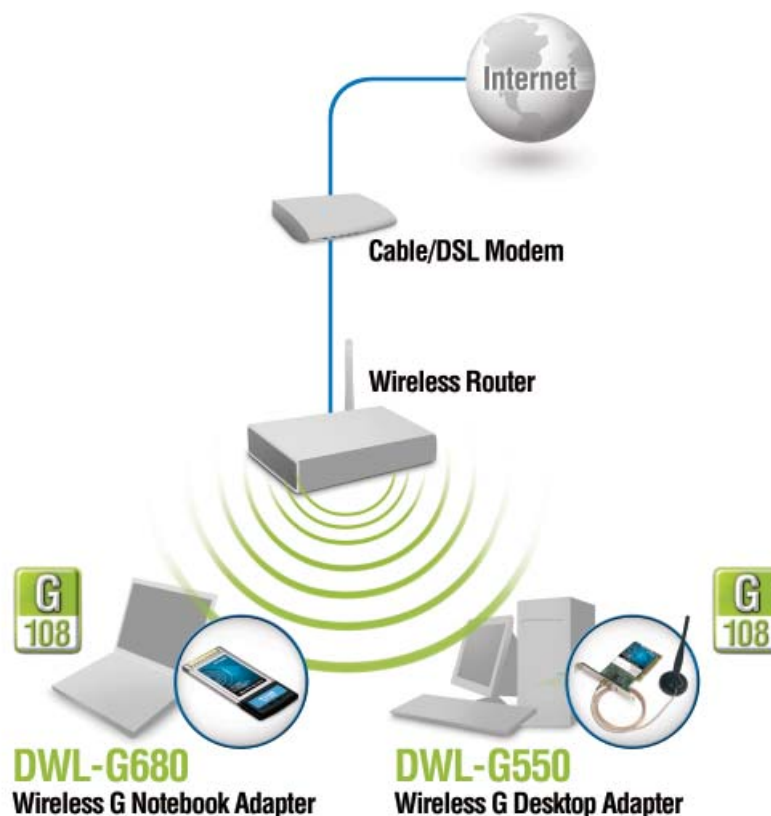
Setting up a Wireless Infrastructure Network

For a typical wireless setup at home, please do the following:

1 You will need broadband Internet access (a cable or DSL-subscriber line into your home or office).

2 Consult with your cable or DSL provider for proper installation of the modem.

3 Connect the cable or DSL modem to your broadband router.
(*See the Quick Installation Guide included with your router.*)

4 Install the D-Link DWL-G680 Wireless 108G Notebook Adaper into an available Cardbus slot on your laptop computer.
(See the Quick Installation Guide included with the DWL-G680.)

5 Install another D-Link DWL-G680 Wireless 108G Notebook Adaper into an available Cardbus slot on your laptop computer.
(See the Quick Installation Guide included with the DWL-G680.)

6 Configure your wireless adapters with the same SSID and security settings, if any, as your access point or wireless router.

Setting up a Wireless Ad-Hoc Network

1

2

DWL-G680
Wireless 108G
Notebook Adapter

DWL-G680
Wireless 108G
Notebook Adapter
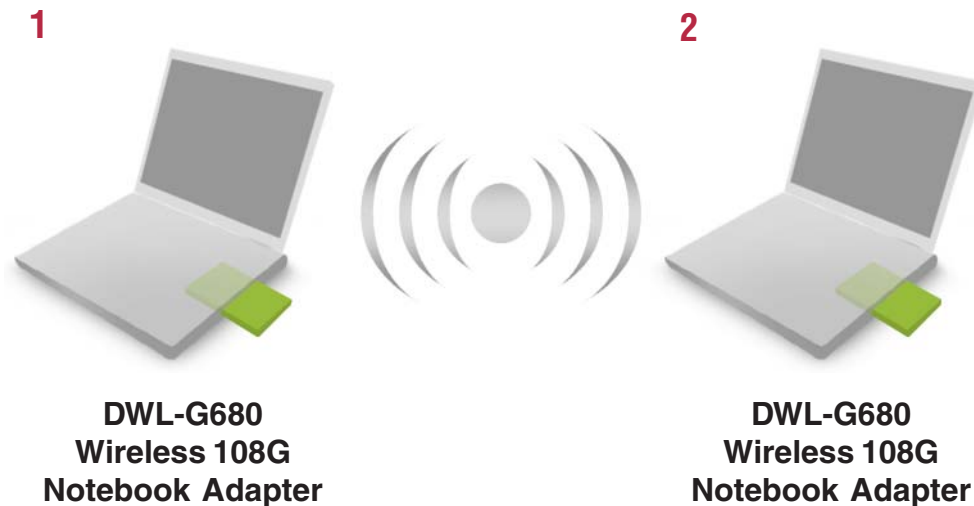
For a typical wireless setup at home (as shown above), please do the following:

1 Install the **D-Link DWL-G680 Wireless 108G Notebook Adaper** into the laptop computer. *(See the Quick Installation Guide included with the product.)*

2 Install the other **D-Link DWL-G680 Wireless 108G Notebook Adaper** into the laptop computer. *(See the Quick Installation Guide included with the product.)*

3 Set the wireless configuration for the adapters to Ad-Hoc mode, set the adapters to the same channel, and assign an IP address to each computer on the Ad-Hoc network.

IP Address

When assigning IP addresses to the computers on the network, please remember that the **IP address for each computer must be in the same IP address range as all the computers in the network**, and the subnet mask must be exactly the same for all the computers in the network.

For example: If the first computer is assigned an IP address of 192.168.0.2 with a subnet mask of 255.255.255.0, then the second computer can be assigned an IP address of 192.168.0.3 with a subnet mask of 255.255.255.0, etc.

IMPORTANT: If computers or other devices are assigned the same IP address, one or more of the devices may not be visible on the network.

Using the Configuration Utility

D-Link DWL-G680 Wireless 108G Notebook Adaper uses the **Configuration Utility** as the management software. The utility provides the user an easy interface to change any settings related to the wireless adapter. After you have completed the installation of the DWL-G680 (refer to the *Quick Installation Guide* that came with your purchase) whenever you start the computer, the **Configuration Utility** starts automatically and the system tray icon is loaded in the toolbar (see illustration below.*) Clicking on the utility icon will start the **Configuration Utility**.

If you are using Windows XP, you can use either the Zero Configuration Utility or the D-Link Configuration Utility.

To use the D-Link Configuration Utility with XP, right-click on the wireless network icon in the taskbar in the lower right-hand corner of your computer screen.

You can then use the D-Link Configuration Utility with XP by right-clicking on the white D-Link Configuration Utility icon.

If the icon does not display in the taskbar, then click on this icon on your desktop to open.
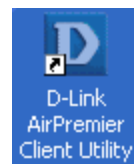
Current Status
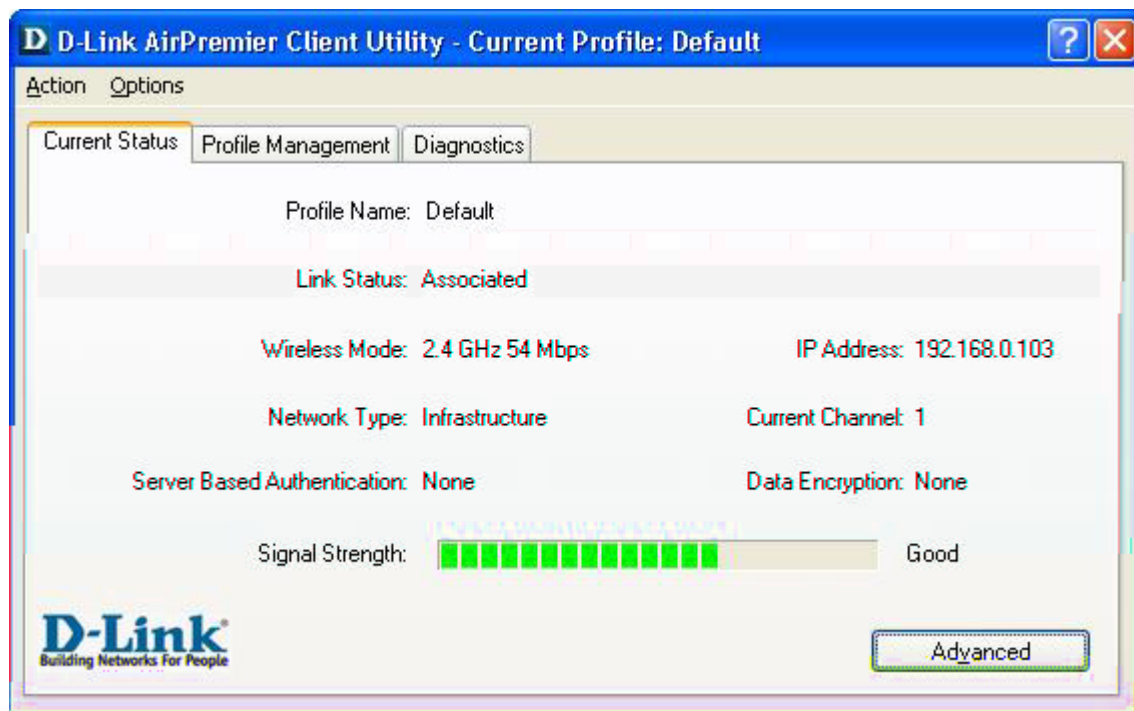
Profile Name:	Displays the current profile being used.
Link Status:	Displays the adapter's connection to the network.
Wireless Mode:	Displays the wireless mode.
IP Address:	Displays the IP address of the DWL-G680.
Network Type:	The factory setting is set to Infrastructure. Ad-Hoc mode is used for peer-to-peer networking.
Current Channel:	Displays the channel information. By default, the channel is set to 6 and selection is automatically determined by the DWL-G680.
Server Based Authentication:	Displays if using 802.1x authentication.
Data Encryption:	Displays the current encryption level.
Signal Strength:	Represents the wireless signal between the access point and the DWL-680. The percentage coincides with the graphical bar.
Advanced:	Click the **Advanced** button to display more specific information regarding your wireless connection.

Current Status - Advanced

The Advanced screen will display specific information regarding your wireless network.

Profile Management - Overview
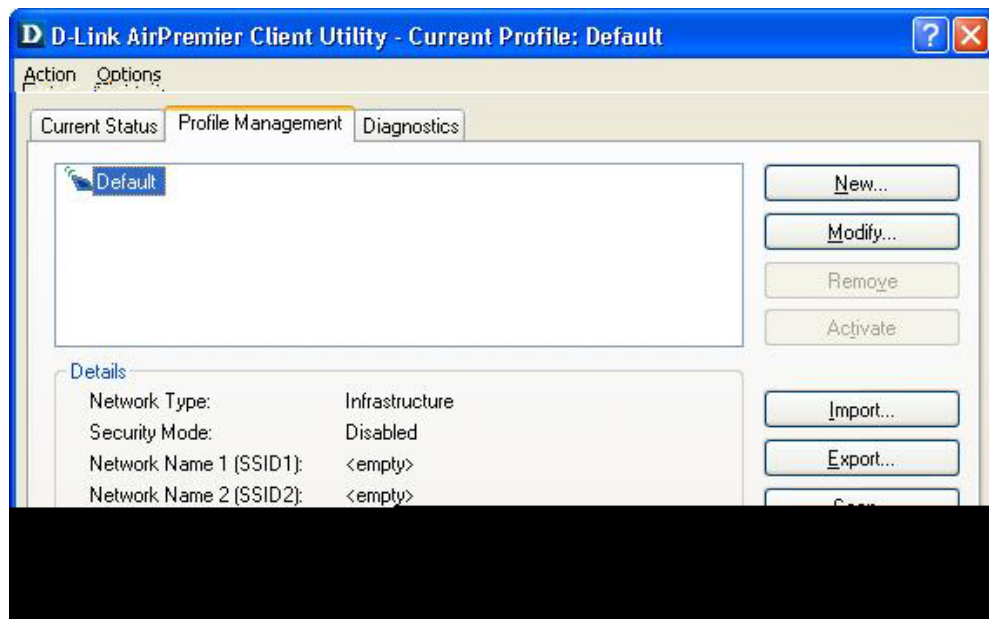
New:	To create a new profile, click the New button.
Modify:	To edit the network information of an existing profile, highlight a profile from the list and click the Modify button.
Remove:	To delete an existing profile, highlight a profile and click the Remove button. If the profile is in use (activated), this option will not be available.
Activate:	To use a profile from the list, highlight the profile and click the Activate button.
Import:	Click the Import button to load a saved profile.
Export:	Save an existing profile by clicking the Export button. You may load a saved profile by clicking the Import button.
Scan:	Launches the site survey tool which will detect all available wireless networks.
Order Profiles:	Change the order of existing profiles.
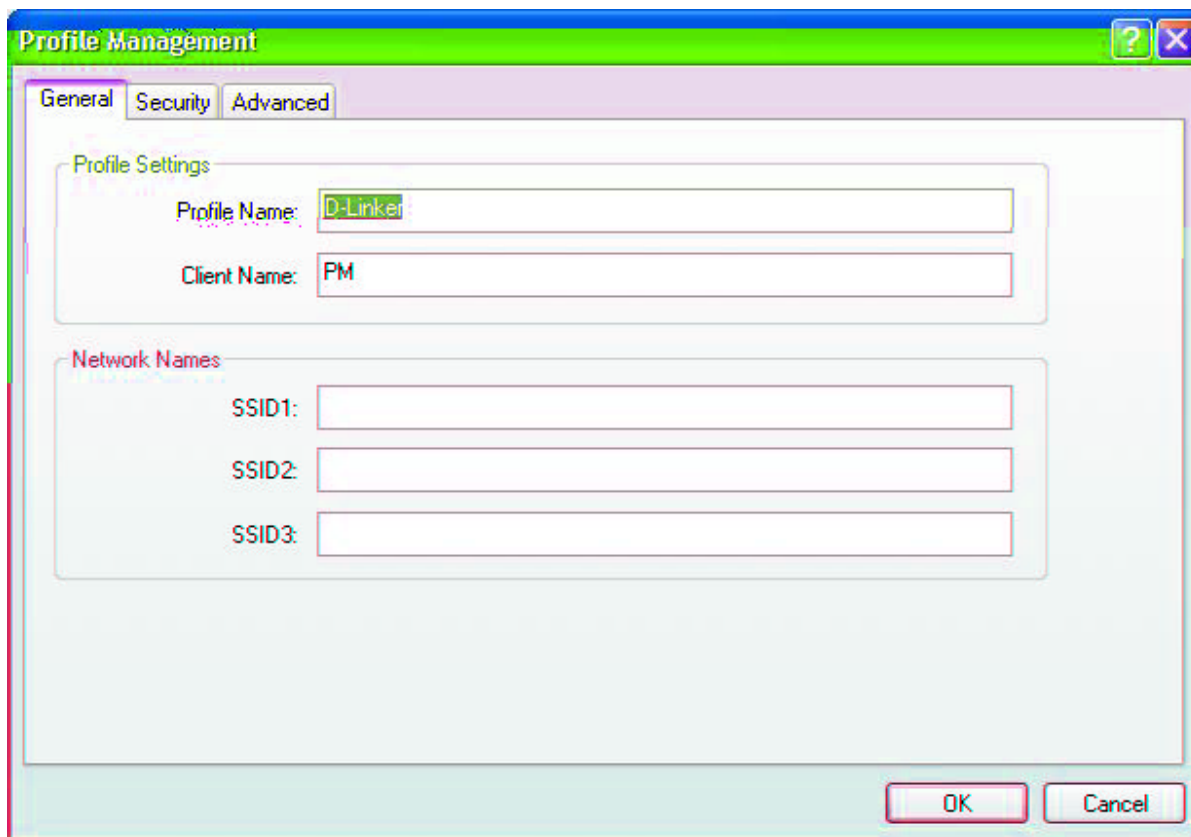
Profile Management - Create/Modify a Profile

From the Profile Management menu select **Add** to create a new profile or **Modify** to edit an existing profile. The following screen will appear:

|	
Profile Name:	Enter a name of your profile.
Client Name:	Enter a client name.
Network Names:	The Service Set Identifier (SSID) is the name assigned to the wireless network. You may enter up to 3 network names (SSIDs).

Click the **Security** tab to enter the encryption information for your wireless network (see page 21). The Advanced tab will allow you to configure your wireless network.

Profile Management - Advanced
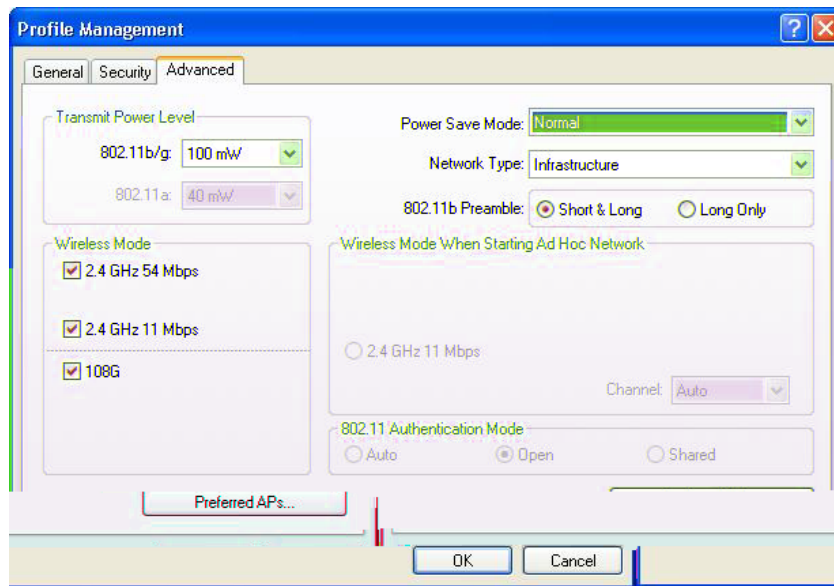
|	
Transmit Power Level:	Select the amount of power transmission of the antenna.
Wireless Mode:	Select the wireless mode of your wireless network. **2.4GH/54Mbps** - Connect to an 802.11b/g network. **2.4GH/11Mbps** - Connect to an 802.11b only network. **108G** - Connect to an 802.11g network using Super G.
Power Save Mode:	Select the amount of power the DWL-G680 will use.
Network Type:	Select the network type from the pull-down menu. **Infrastructure** - Connect to an access point or router. **Ad-Hoc** - Connect to another wireless client (peer-to-peer).
802.11b Preamble:	Select either Short & Long (default) or Long Only.
Wireless Mode When Starting Ad-Hoc Mode:	If your network type is Ad-Hoc, the following options will be available: **2.4GHz 11Mbps** - Select if connecting to an 802.11b only client. **Channel** - The channel must be the same on the other wireless clients to connect.
802.11 Authentication Mode:	Select one of the following: **Auto** - The DWL-G680 will select the best authentication mode for your network. **Open** - the adapter is visible to all devices on the network. **Shared** - allows communication only with other devices with identical WEP settings.

# Profile Management - Import/Export Profiles

You can save profiles to your computer by using the Export function. This will allow you to copy to a disk and load a profile containing your wireless network configuration settings to another computer using the DWL-G680.
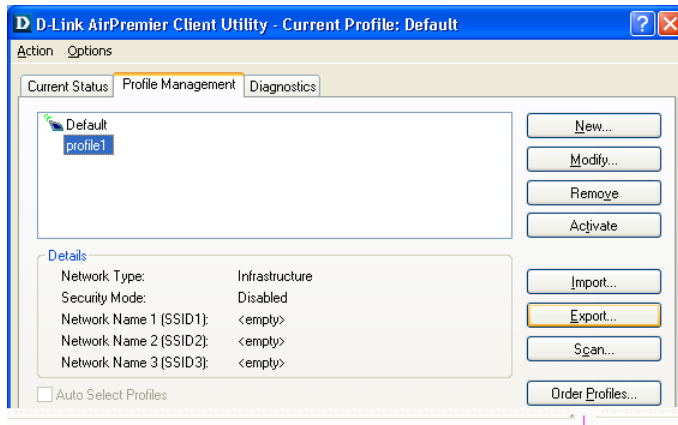
To save a profile, highlight the profile you would like to save and click the Export button. Select the location and click Save.
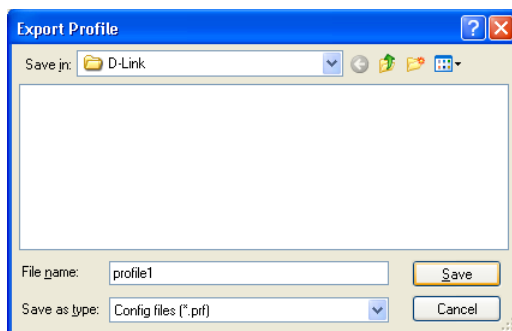
To load a profile, click the Import button. Select the profile you want to load and click Open. The profile will now be located in the Profile Management list. To use the loaded settings, highlight the profile and click Activate.
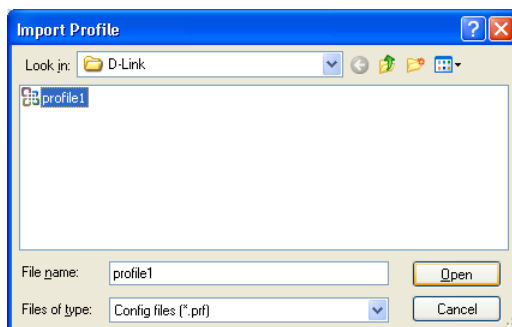
Profile Management - Scan (Site Survey)
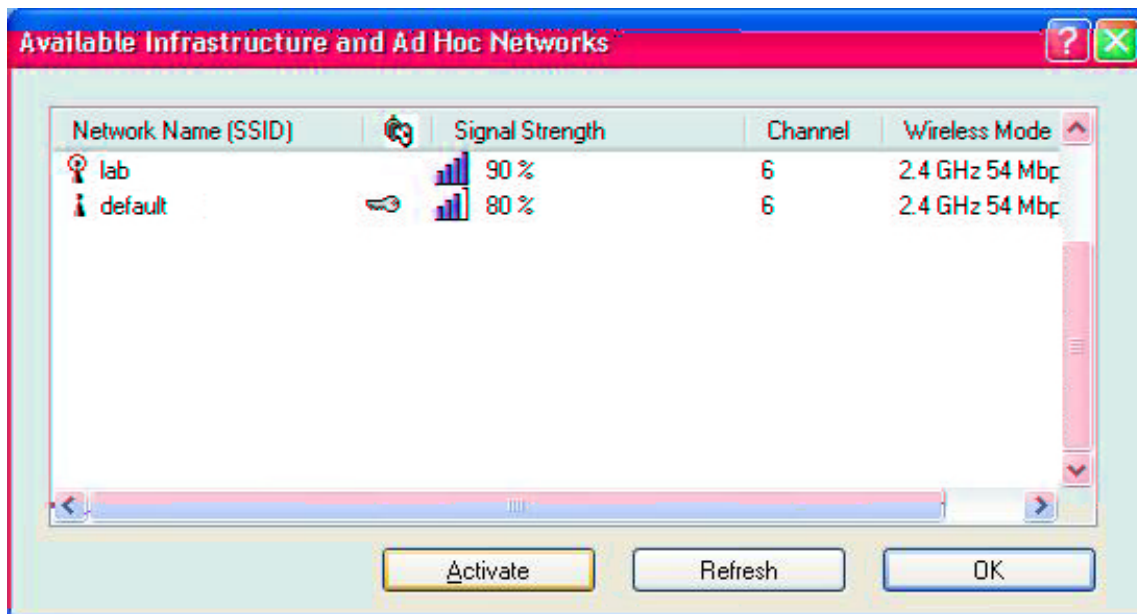
|	
Network Name (SSID):	The Service Set Identifier is the name assigned to the wireless network. The factory SSID setting is **default**.
Security:	If a key icon is displayed, the wireless network is using either WEP or WPA security. You must know the security settings to connect to a secure network.
Signal Strength:	Displays the signal strength of the wireless network.
Channel:	The channel selection is automatically determined by the DWL-G680. When in Ad-Hoc mode, you may select a channel manually. The default channel is 6.
Wireless Mode:	Displays the type of wireless network.

Profile Management - Order Profiles

The Order Profiles section will allow you to select profiles to activate when the computer is turned on or when the DWL-G680 is inserted into the computer.

From the Profile Management menu, click **Order Profiles**.
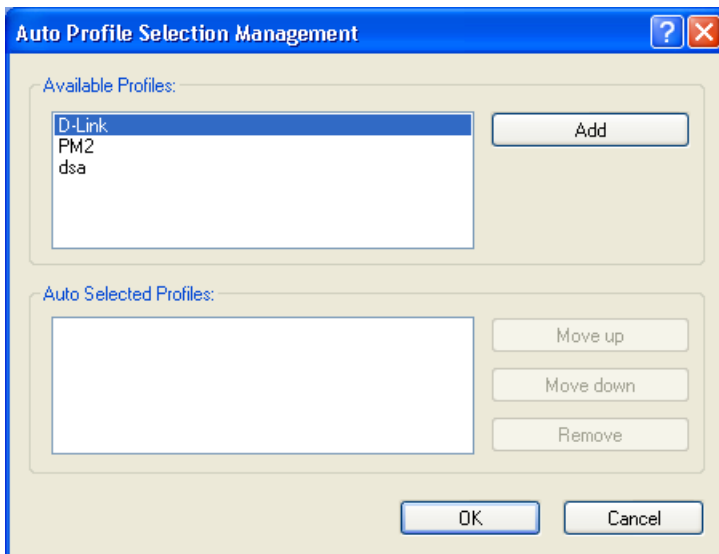

To add a profile to the Auto Selected Profiles list, highlight the profile and click **Add**. The Move Up and Move Down buttons will allow you to prioritize multiple profiles.
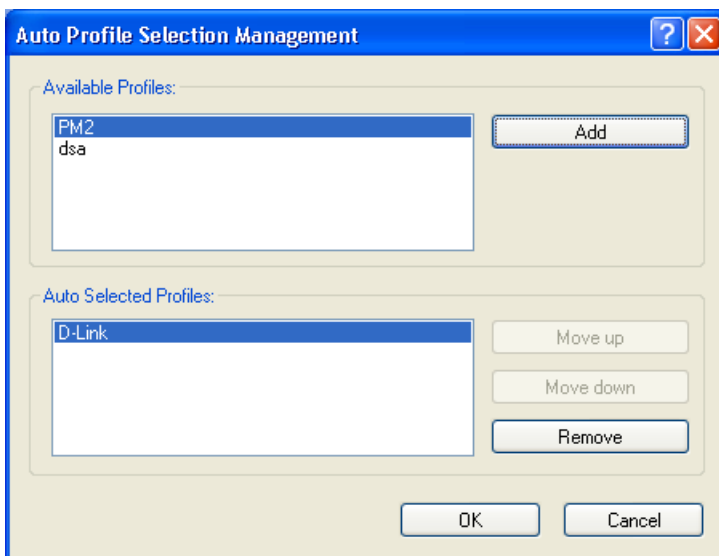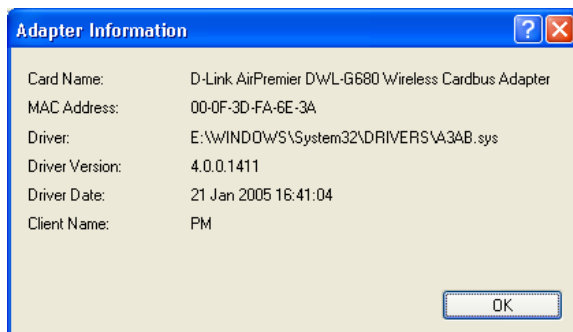

To delete a profile from the Auto Selected Profiles list, highlight the profile and click the **Remove** button.

Note: Profiles must have a SSID specified in order for the profile to show up in the Available Profiles list.
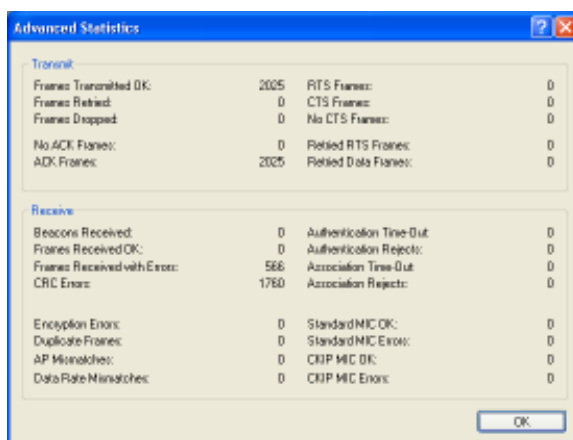
Diagnostics
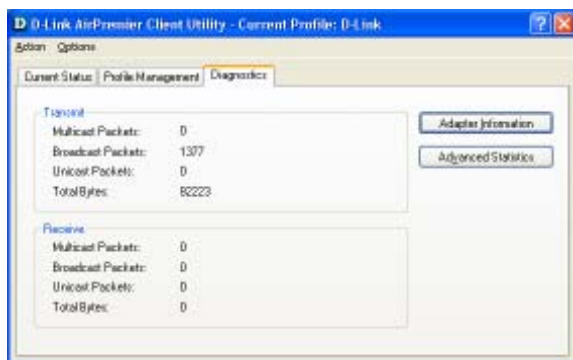
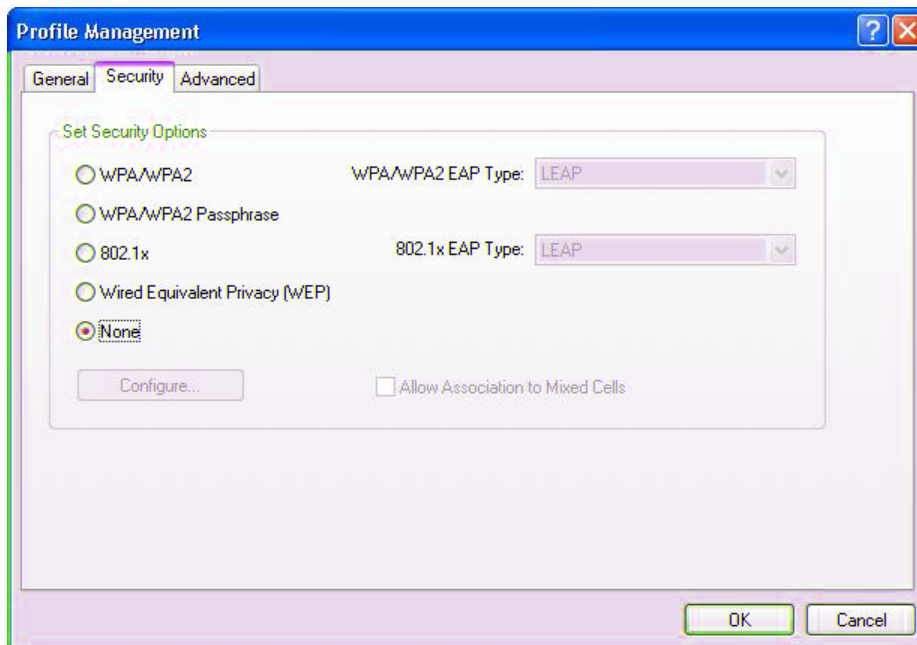This screen will display basic statistics for the current wireless connection.

The **Adapter Information** screen will display information regarding the DWL-G680 such as the MAC address and driver version.

The **Advanced Information** screen will display more detailed information regarding your wireless connection.

Security - Overview

WPA/WPA2: Click to use WPA user authentication. Wi-Fi Protected Access (WPA) improves upon WEP security. In conjunction with a RADIUS server and EAP (Extensible Authentication Protocol), WPA ensures that only authenticated users access the network.

WPA/WPA2 Passphrase: Click to use WPA (Passphrase) encryption. WPA-PSK provides user authentication without a RADIUS server in the network. PSK (Pre-Shared Key) provides authentication through use of a passphrase that is shared by the devices on the network. This is the most secure encryption available without a RADIUS server.

802.1x: Click to use authentication. 802.1x requires that a RADIUS server be included in your network in order to authenticate users.
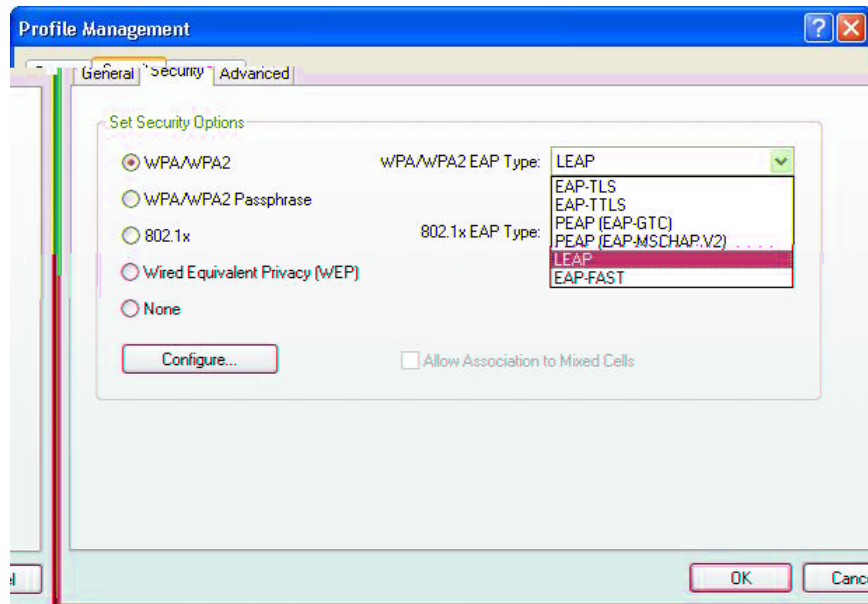
WEP: Click to use Wired Equivalent Privacy (WEP) encryption.

None: Disables security.

Security - WPA/WPA2

Wi-Fi Protected Access (WPA) improves upon WEP security. In conjunction with a RADIUS server and EAP (Extensible Authentication Protocol), WPA ensures that only authenticated users access the network.

To use WPA/WPA2, click the **WPA/WPA2** radio button. Select the Authentication type from the pull-down menu and click the **Configure** button.


Depending on the type of Authentication you use, you must enter the login/certificate information. Click **OK** to save your settings.

EAP: Extensible Authentication Protocols (EAP-TLS, LEAP, EAP-TTLS, PEAP) allow devices on the network to request authentication from the RADIUS server in the network. All the devices on the network must use the same EAP type when using a RADIUS server for authentication.

User Certificate: A certificate authority (CA) issues User Certificates to verify that a public key belongs to a specific individual or company.

Security - WPA/WPA2 Passphrase

WPA (passphrase) offers improved data encryption through the **Temporal Key Integrity Protocol** (TKIP). By using TKIP (Temporal Key Integrity Protocol), the security keys change at set intervals, creating a network that is more secure than one that utilizes WEP encryption alone. Suitable for the home user, WPA Passphrase is a superior form of security that does not require a RADIUS server in the network.
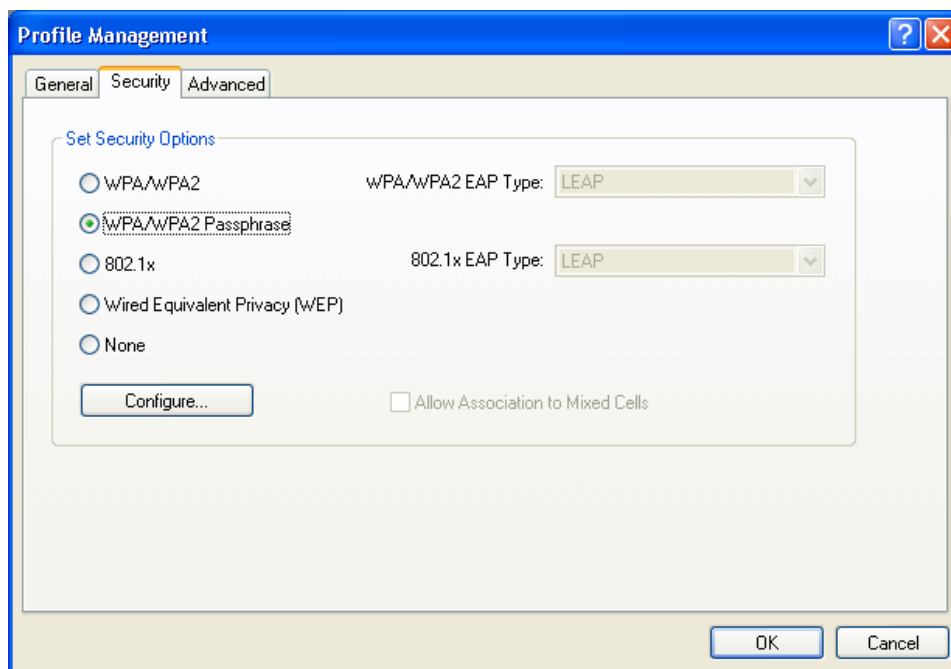
To enable WPA/WPA2 Passphrase, click the radio button next to **WPA/WPA2 Passphrase** and click the Configure button.
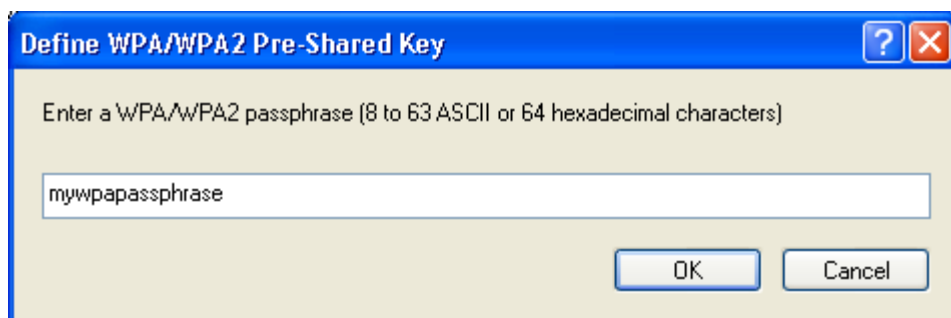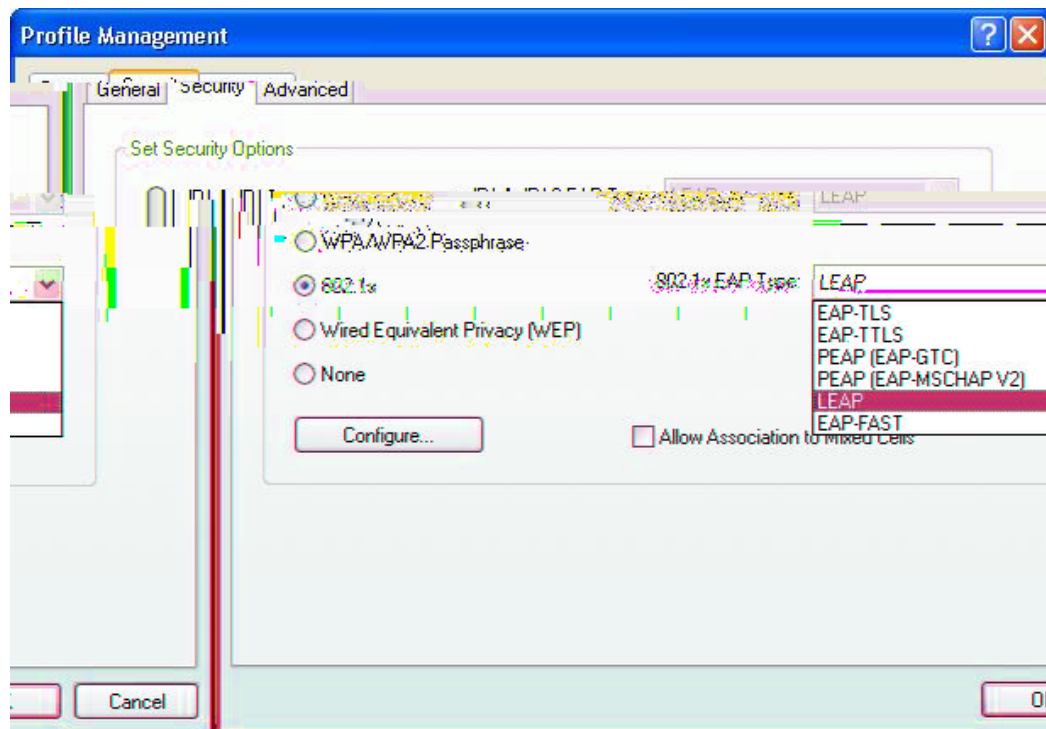
Enter a passphrase into the box as seen above. The passphrase is an alpha-numeric password between 8 and 63 characters long and can include symbols (!?*&_) and spaces. This passphrase must be exactly the same on all other wireless devices on your network. Click the **OK** button to save your settings.

Security - 802.1x

802.1x requires that a RADIUS server be included in your network in order to authenticate users. To use 802.1x server authentication, click the **802.1x** radio button. Select the Authentication type from the pull-down menu and click the **Configure** button.


Depending on the type of Authentication you use, you must enter the login/certificate information. Click **OK** to save your settings.

EAP: Extensible Authentication Protocols (EAP-TLS, LEAP, EAP-TTLS, PEAP) allow devices on the network to request authentication from the RADIUS server in the network. All the devices on the network must use the same EAP type when using a RADIUS server for authentication.

User Certificate: A certificate authority (CA) issues User Certificates to verify that a public key belongs to a specific individual or company.

Security - WEP

WEP (**Wired Equivalent Privacy)** is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. Enabling WEP allows you to increase security by encrypting data being transferred over your wireless network.
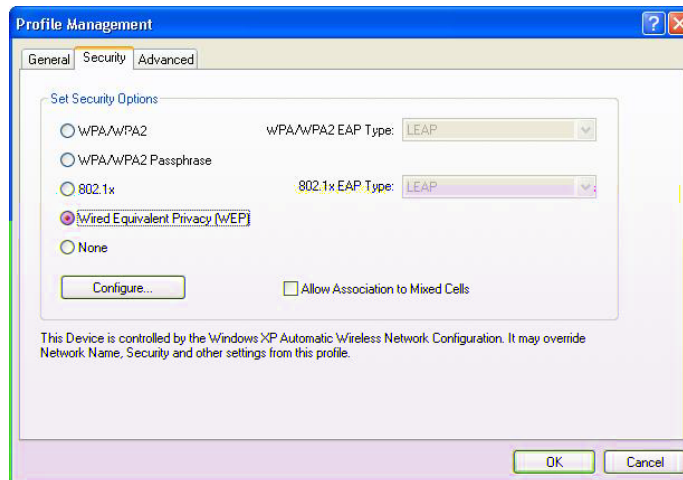
To enable WEP, click the radio button next to **Wired Equivalent Privacy (WEP)** and click the **Configure** button.
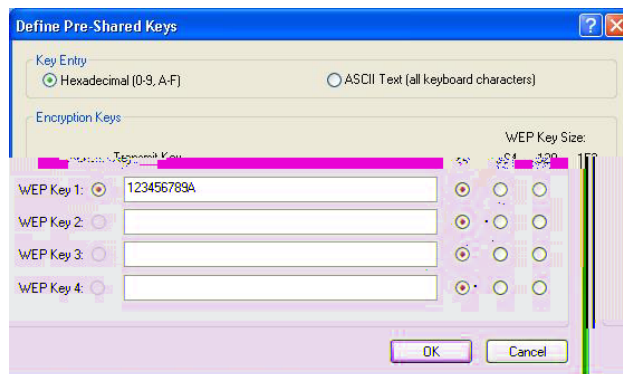
Key Entry:	Select the WEP key format (Hexadecimal or ASCII) **Hexadecimal** - only A-F and 0-9 are valid characters. **ASCII** - All numbers and letters are valid characters.
Encryption Keys:	Enter a WEP key and then select the encryption level. You can make up to 4 different keys.
WEP Key Size:	Select the level of WEP encryption - 64, 128, or 152-bit.

Note: Your network will slow down and wireless signal may degrade when enabling WEP encryption due to the added overhead.

Networking Basics

Using the Network Setup Wizard in Windows XP

In this section you will learn how to establish a network at home or work, using **Microsoft Windows XP.**

Note: Please refer to websites such as http://www.homenethelp.com and http://www.microsoft.com/windows2000 for information about networking computers using Windows 2000.
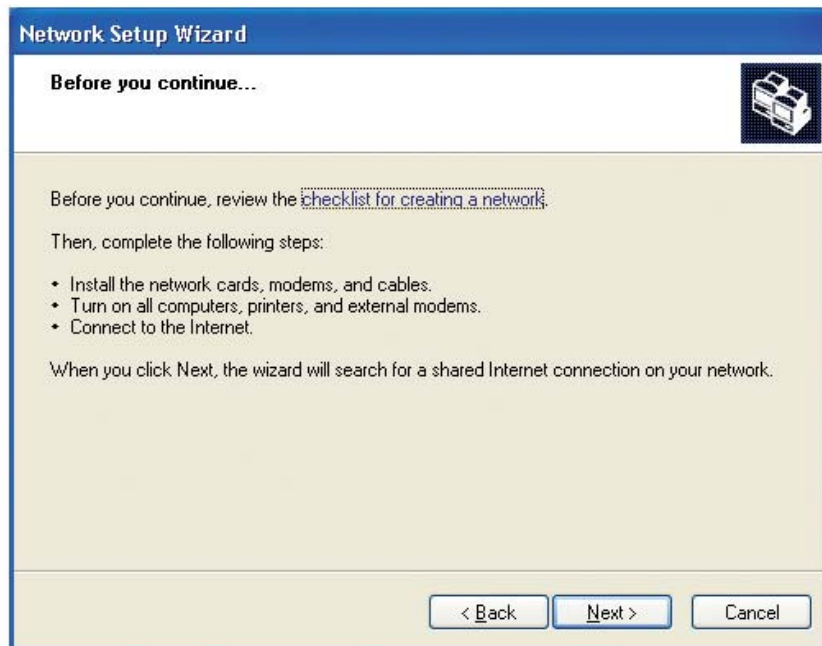
Go to **Start>Control Panel>Network Connections**

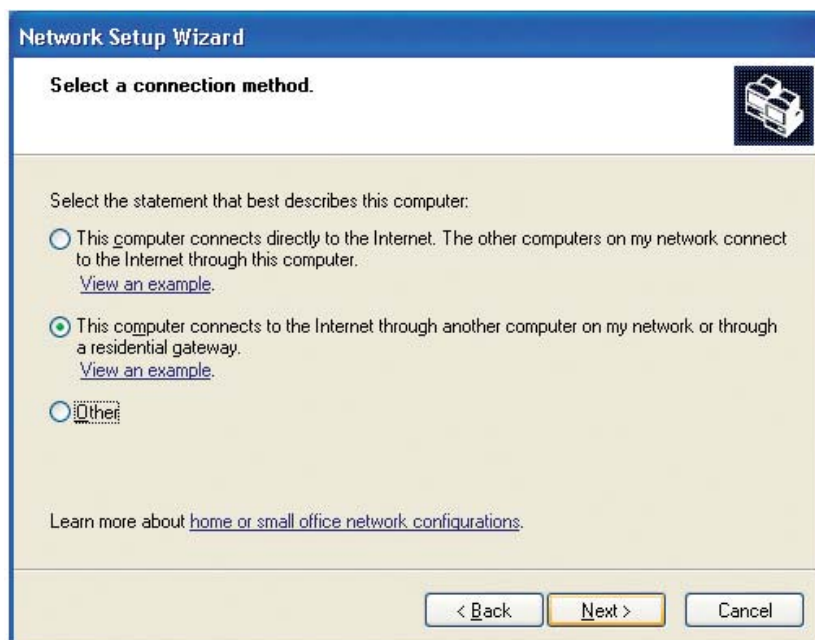Select **Set up a home or small office network**

When this screen appears, click **Next.**

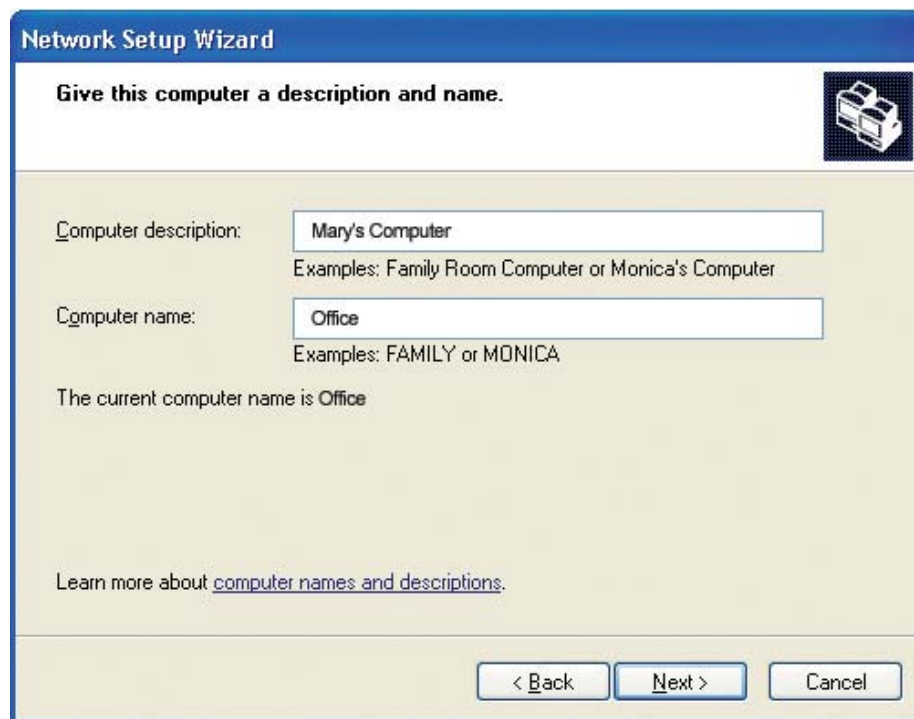Please follow all the instructions in this window:

Click **Next**.

In the following window, select the best description of your computer. If your computer connects to the Internet through a router, select the second option as shown.
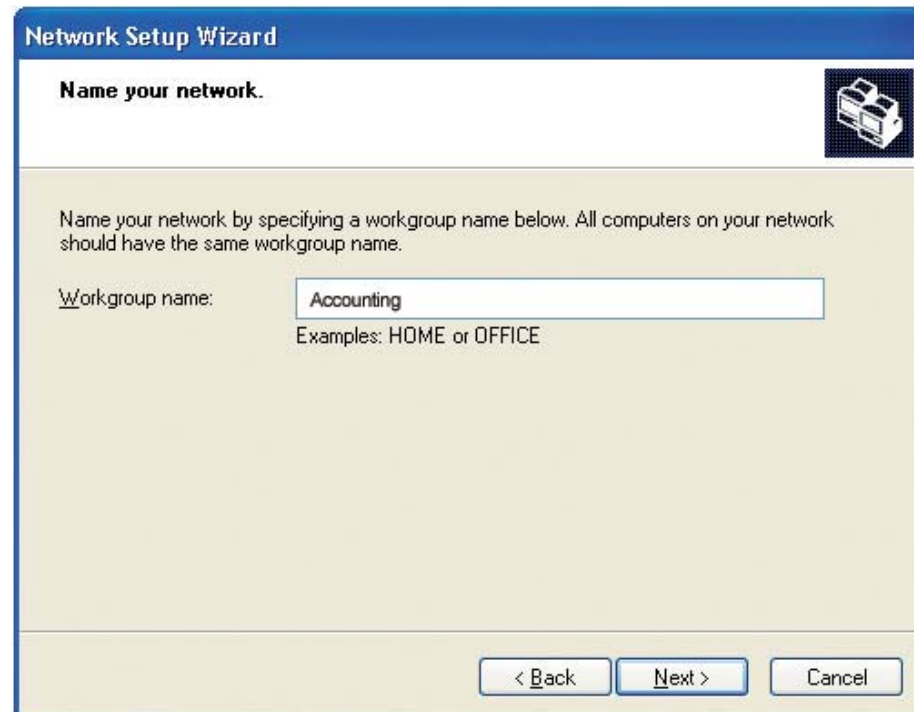

Click **Next**.

Enter a **Computer description** and a **Computer name** (optional).

Network Setup Wizard

Give this computer a description and name.

Computer description: ___Mary's Computer___
Examples: Family Room Computer or Monica's Computer

Computer name: ___Office___
Examples: FAMILY or MONICA

The current computer name is Office

Learn more about computer names and descriptions.

< Back　　Next >　　Cancel

Click **Next.**

Enter a **Workgroup** name. All computers on your network should have the same **Workgroup name.**

Network Setup Wizard

Name your network.

Name your network by specifying a workgroup name below. All computers on your network should have the same workgroup name.

Workgroup name: ___Accounting___
Examples: HOME or OFFICE

< Back　　Next >　　Cancel

Click **Next.**

Please wait while the **Network Setup Wizard** applies the changes.

Network Setup Wizard

Ready to apply network settings...

The wizard will apply the following settings. This process may take a few minutes to complete and cannot be interrupted.

Settings:

Network settings:

Computer description:	Mary's Computer
Computer name:	Office
Workgroup name:	Accounting

The Shared Documents folder and any printers connected to this computer have been shared.

To apply these settings, click Next.
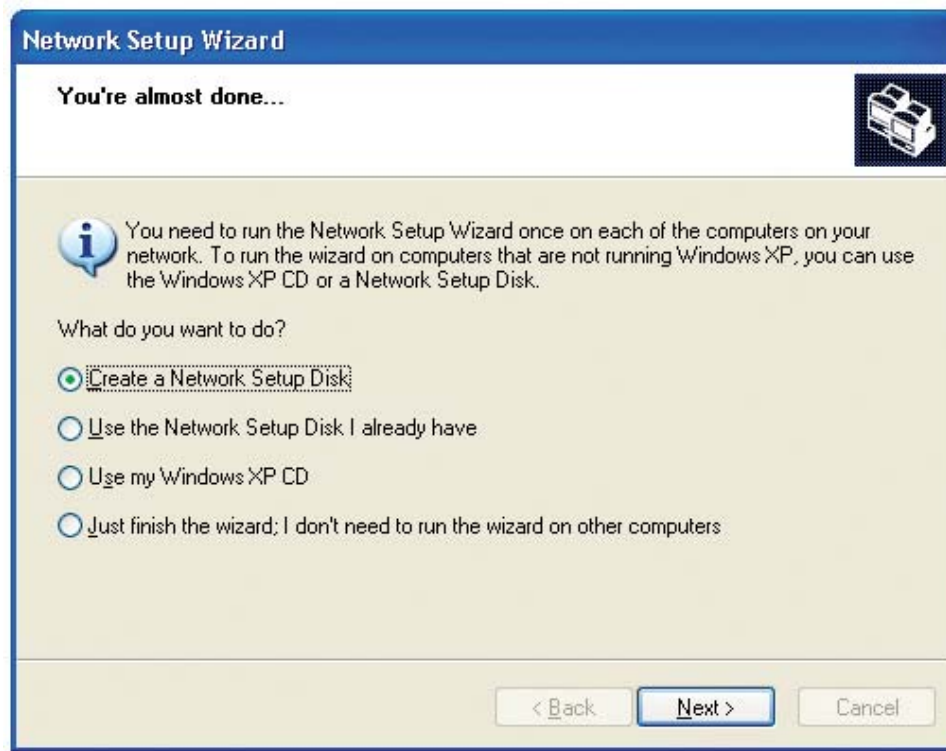
< Back   Next >   Cancel

When the changes are complete, click **Next**.

Please wait while the **Network Setup Wizard** configures the computer.
This may take a few minutes.

Network Setup Wizard

Please wait...

Please wait while the wizard configures this computer for home or small office networking. This process may take a few minutes.

< Back   Next >   Cancel
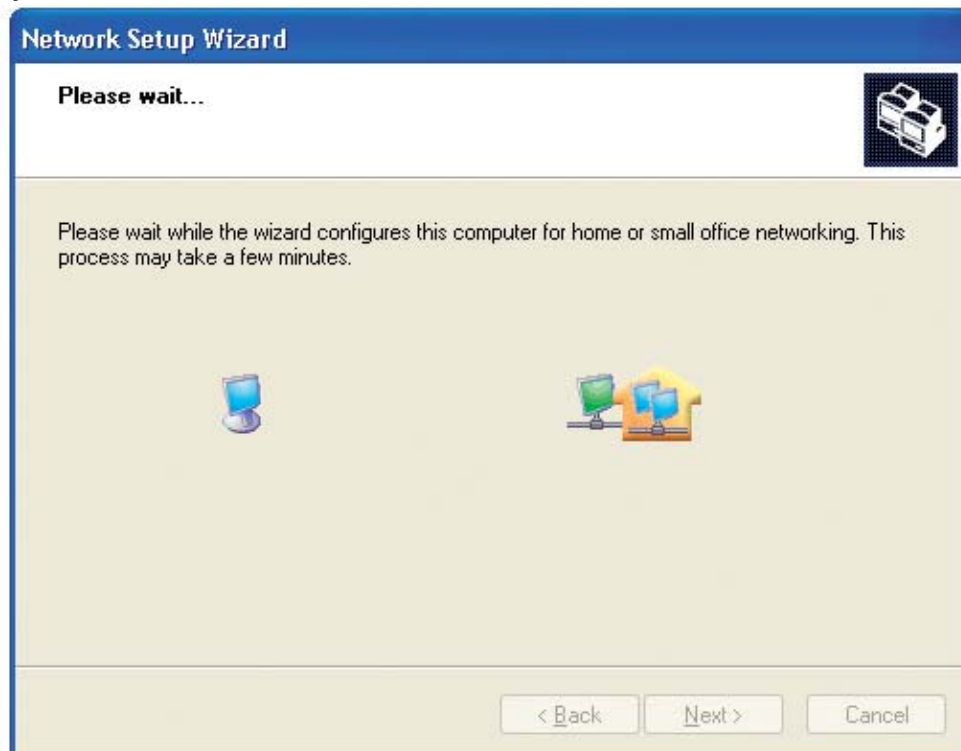
In the window below, select the option that fits your needs. In this example, **Create a Network Setup Disk** has been selected. You will run this disk on each of the computers on your network. Click **Next**.

Network Setup Wizard

You're almost done...

You need to run the Network Setup Wizard once on each of the computers on your network. To run the wizard on computers that are not running Windows XP, you can use the Windows XP CD or a Network Setup Disk.

What do you want to do?

⦿ Create a Network Setup Disk

◯ Use the Network Setup Disk I already have

◯ Use my Windows XP CD

◯ Just finish the wizard; I don't need to run the wizard on other computers

[< Back] [Next >] [Cancel]

Insert a disk into the Floppy Disk Drive, in this case drive **A.**

Network Setup Wizard

Insert the disk you want to use.

Insert a disk the into the following disk drive, and then click Next.

3½ Floppy (A:)

If you want to format the disk, click Format Disk.

[Format Disk]

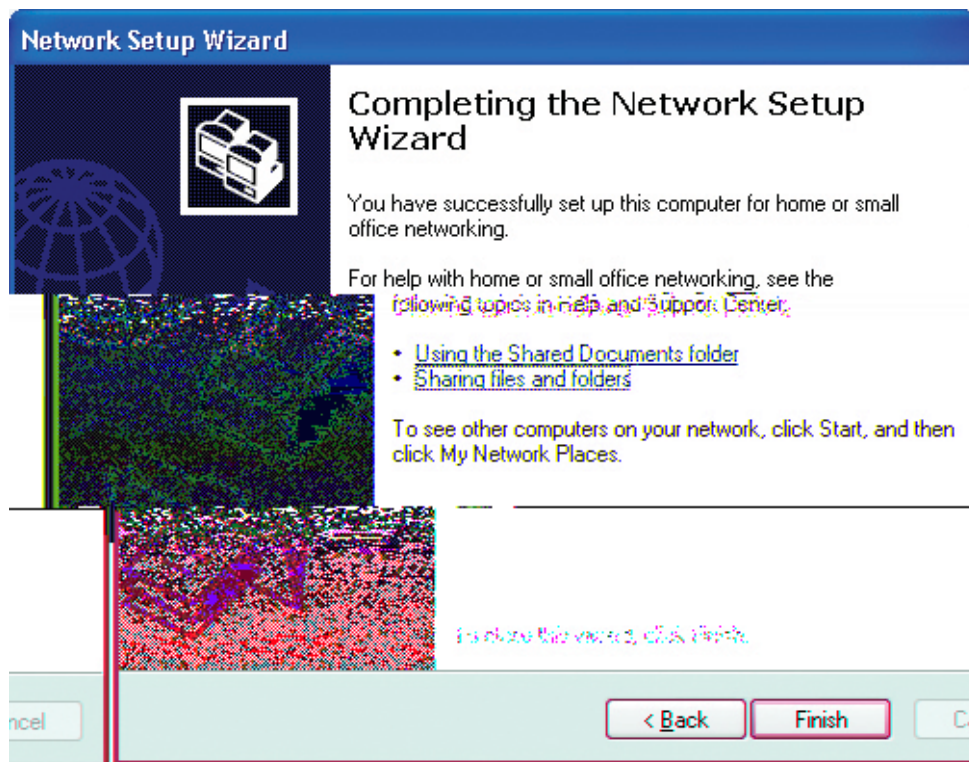[< Back] [Next >] [Cancel]
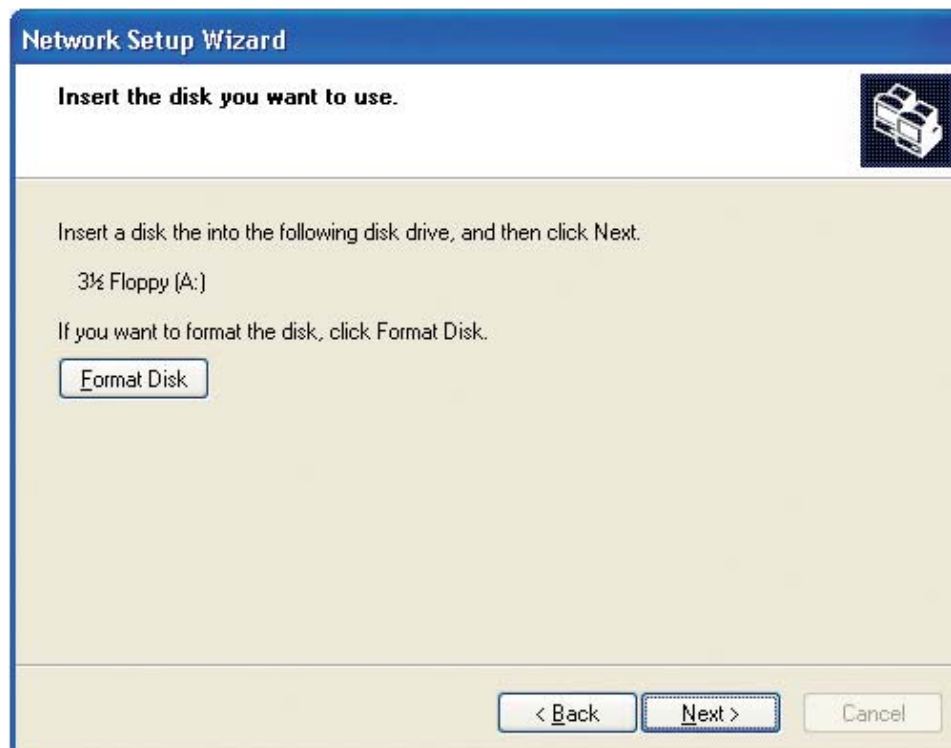
Click **Next**.

Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. Click **Next.**
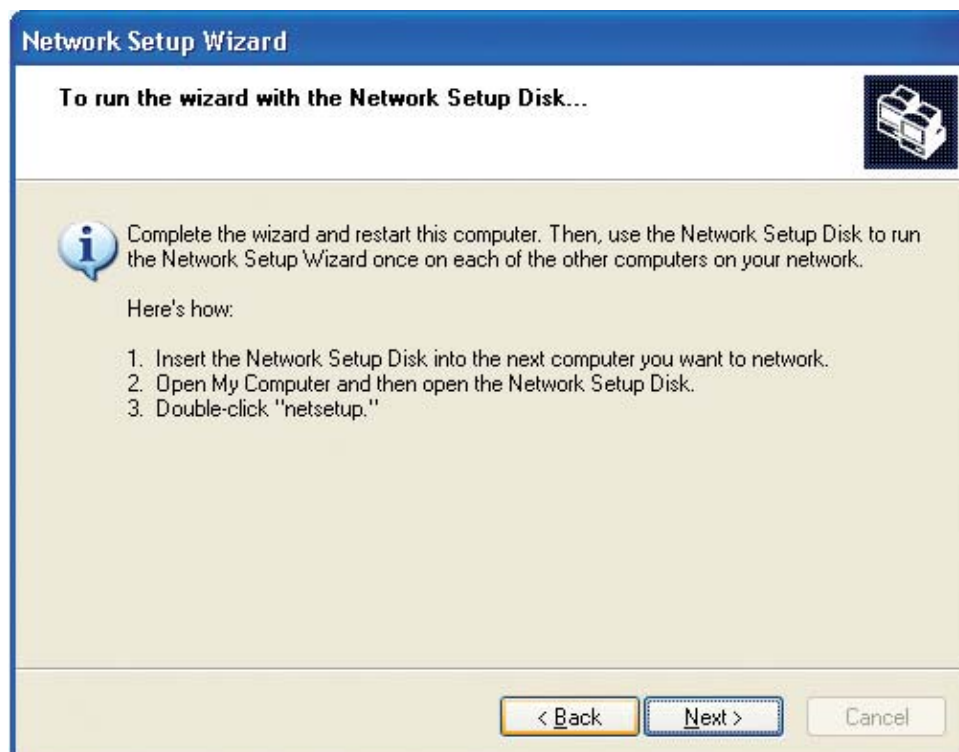
Please read the information on this screen, then click **Finish** to complete the **Network Setup Wizard**.

The new settings will take effect when you restart the computer. Click **Yes** to restart the computer.

You have completed configuring this computer. Next, you will need to run the **Network Setup Disk** on all the other computers on your network. After running the **Network Setup Disk** on all your computers, your new wireless network will be ready to use.

Please read the information on this screen, then click **Finish** to complete the **Network Setup Wizard**.
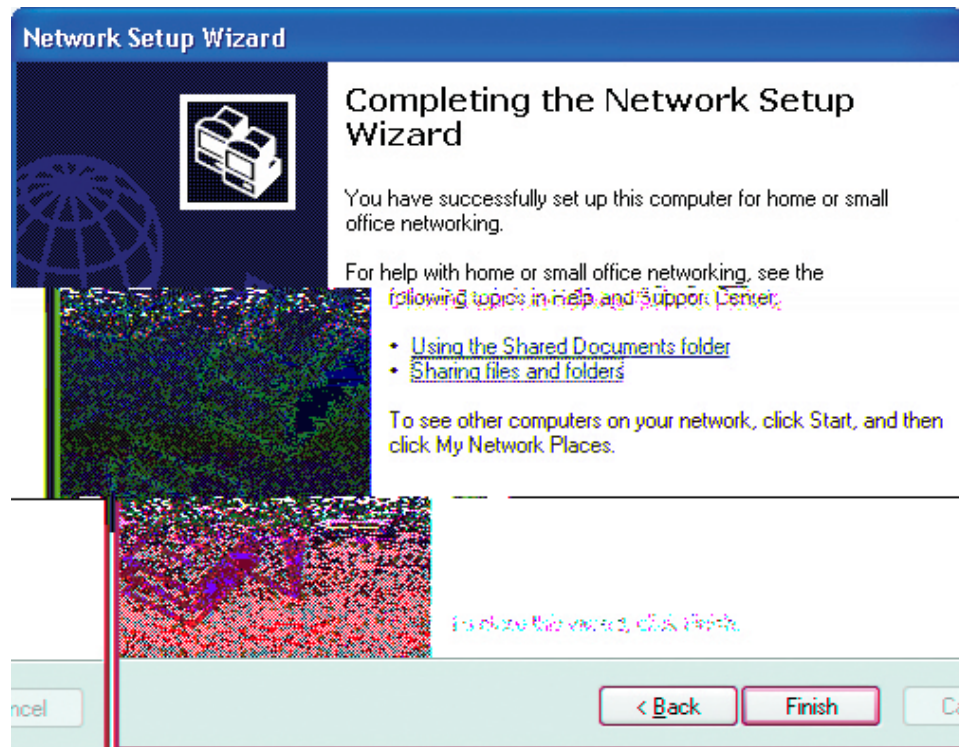

The new settings will take effect when you restart the computer. Click **Yes** to restart the computer.

You have completed configuring this computer. Next, you will need to run the **Network Setup Disk** on all the other computers on your network. After running the **Network Setup Disk** on all your computers, your new wireless network will be ready to use.

Naming your Computer

To name your computer using **Windows XP**, please follow these directions:

Click **Start** (in the lower left corner of the screen).
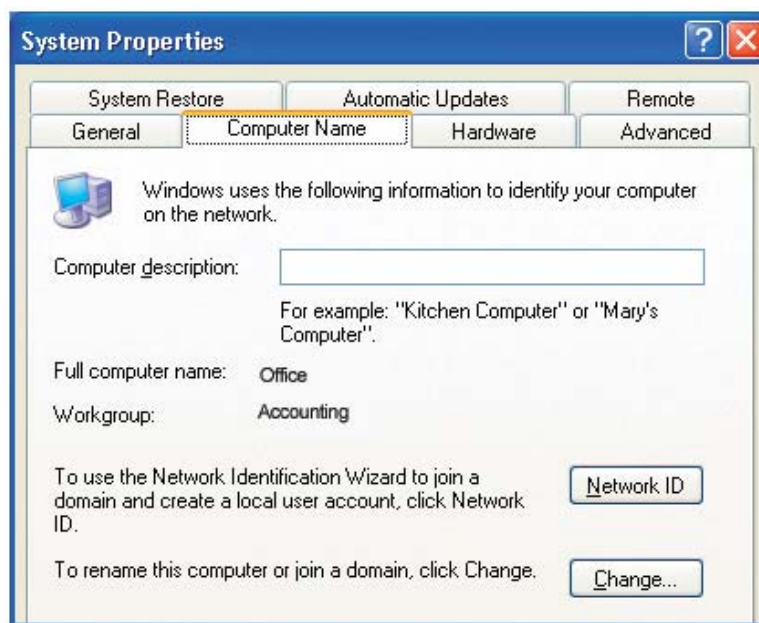
Right-click on **My Computer**.

Select **Properties**.

Select the **Computer Name Tab** in the System Properties window.

You may enter a **Computer Description** if you wish; this field is optional.

To rename the computer and join a domain, click **Change**.

Naming Your Computer

In this window, enter the **Computer name**.

Select **Workgroup** and enter the name of the **Workgroup**.

All computers on your network must have the same **Workgroup** name.

Click **OK**.
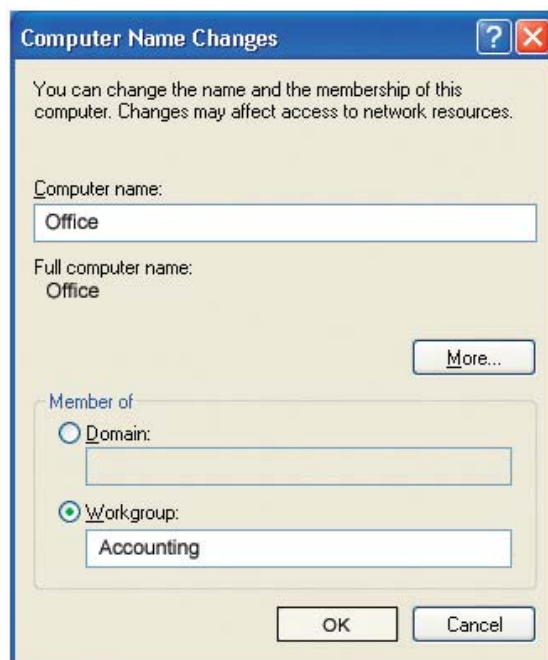
Checking the IP Address in <u>Windows XP</u>

All wireless adapter-equipped computers in your network must be in the same IP address range (see **Getting Started** in this manual for a definition of IP address range.) To check on the IP address of an adapter, please do the following:

Right-click on the **Local Area Connection icon** in the task bar.

Click on **Status**.

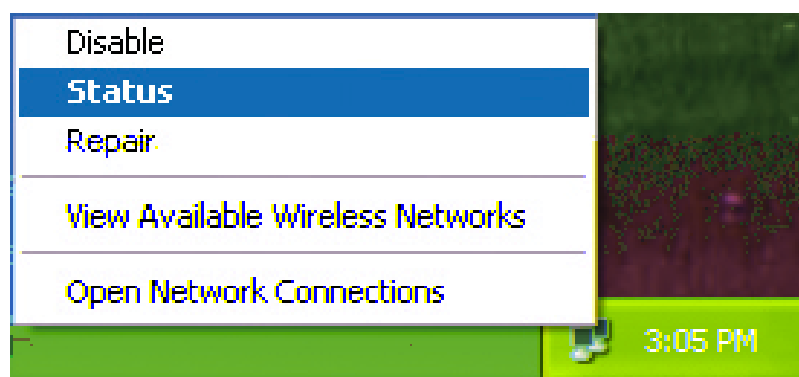## Checking the IP Address in Windows XP

Click the **Support tab**.
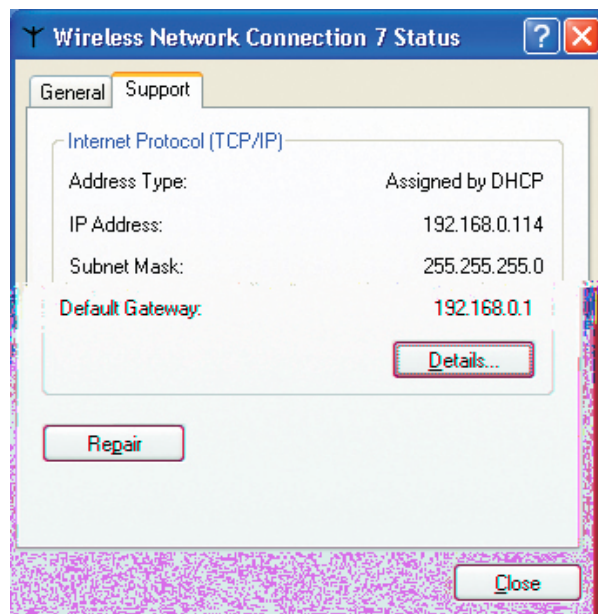
Click **Close**.

Assigning a Static IP Address in <u>Windows XP/2000</u>

Note: Many broadband routers will automatically assign IP addresses to the computers on the network, using DHCP (Dynamic Host Configuration Protocol) technology. If you are using a DHCP-capable router you will not need to assign static IP addresses.

If you are not using a DHCP capable router, or you need to assign a static IP address, please follow these instructions:

Go to **Start**.

Click on **Control Panel**.

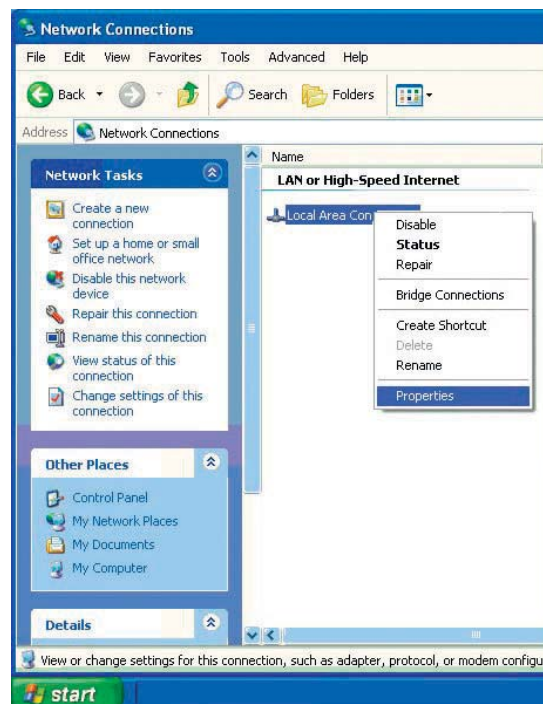## Assigning a Static IP Address in Windows XP/2000

Double-click on **Network Connections**.
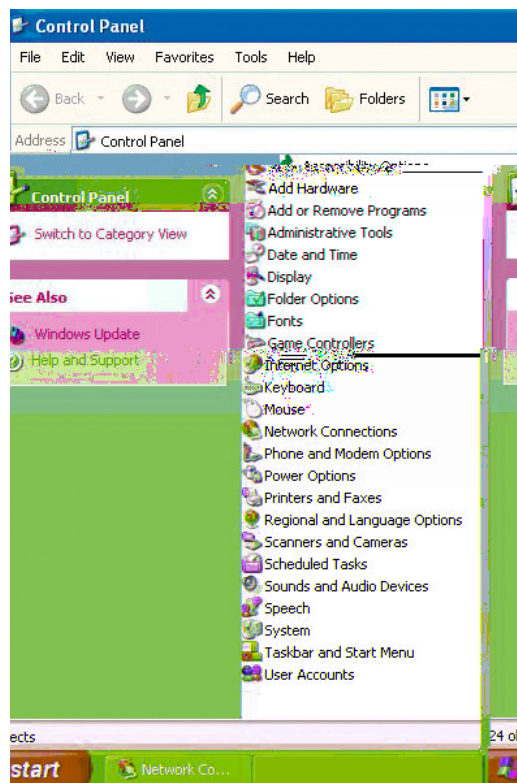
Right-click on **Local Area Connections**.

Click on **Properties**.

Assigning a Static IP Address in Windows XP/2000

Click on **Internet Protocol (TCP/IP).**

Click **Properties.**
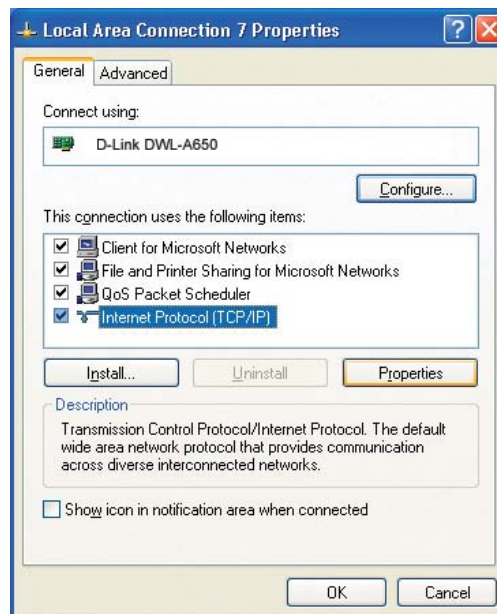
Input your **IP address and subnet mask.** (The IP addresses on your network must be within the same range. For example, if one computer has an IP address of 192.168.0.2, the other computers should have IP addresses that are sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.)
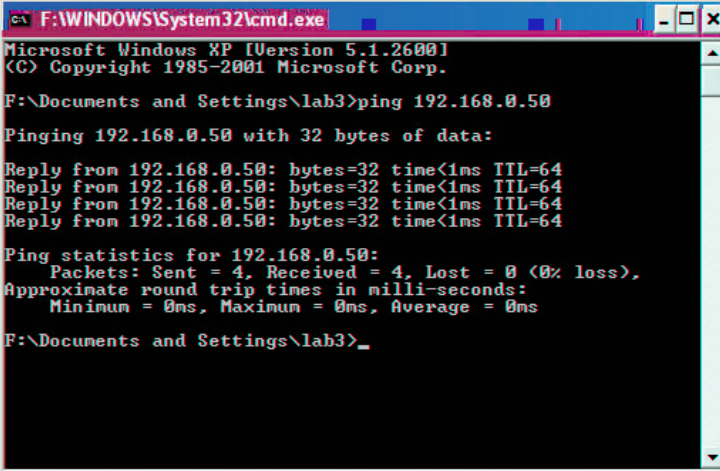
Input your DNS server addresses. (Note: If you are entering a DNS server, you must enter the IP address of the Default Gateway.)

The DNS server information will be supplied by your ISP (Internet Service Provider.)
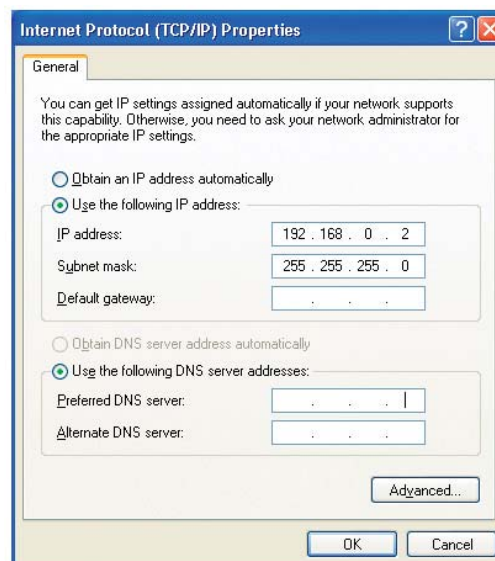
Click **OK.**

Checking the Wireless Connection
by <u>Pinging in Windows XP and 2000</u>

```
F:\WINDOWS\System32\cmd.exe                                    _ □ ×
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

F:\Documents and Settings\lab3>ping 192.168.0.50

Pinging 192.168.0.50 with 32 bytes of data:

Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.0.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

F:\Documents and Settings\lab3>_
```

Go to **Start** > **Run** > type **cmd**. A window similar to this one will appear. Type **ping xxx.xxx.xxx.xxx**, where **xxx** is the **IP address** of the wireless router or access point. A good wireless connection will show four replies from the wireless router or access point, as shown.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWL-G680. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows XP. If you have another operating system, these solutions will still apply although the appearance on your computer screen may differ.)

1. How do I check to see that the drivers for the DWL-G680 are installed properly?

Go to **Start** > **My Computer** > **Properties**.
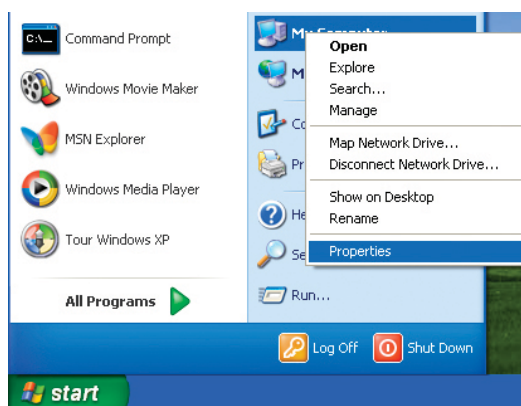
Select the **Hardware Tab**.

Click **Device Manager**.
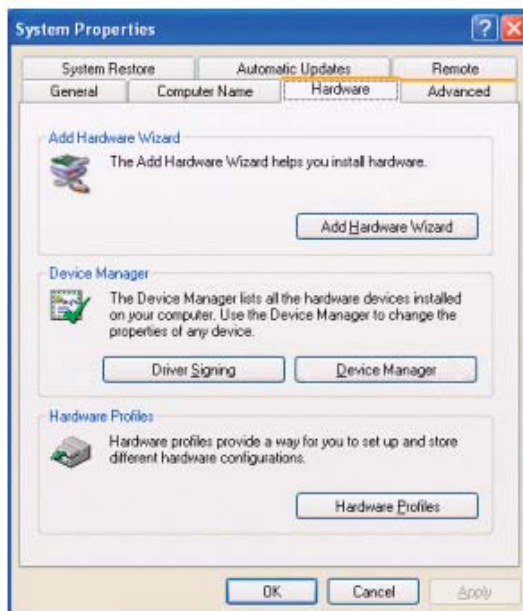
Double-click on **Network Adapters**.

Right-click on **D-Link DWL-G680 Wireless 108G Notebook Adaper**.

Select **Properties** to check that the drivers are installed properly.
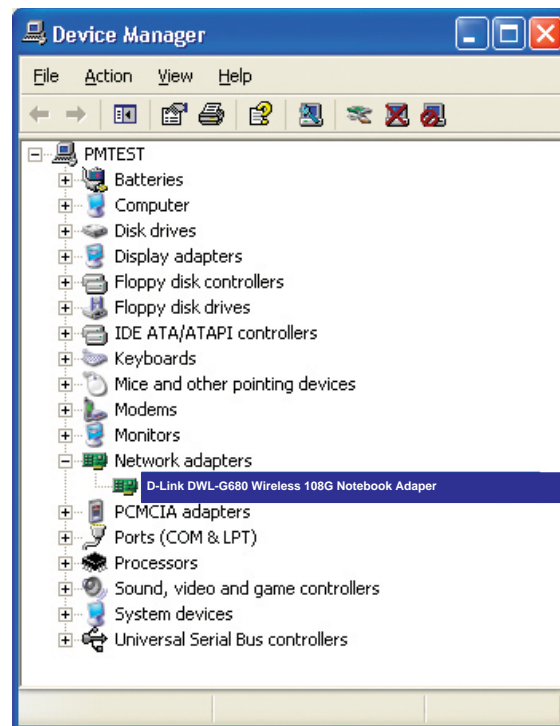
Look under **Device Status** to check that the device is working properly.

Click **OK**.

2. What variables may cause my wireless products to lose reception?

D-Link products let you access your network from virtually anywhere you want. However, the positioning of the products within your environment will affect the wireless range. Please refer to **Installation Considerations** in the **Wireless Basics** section of this manual for further information about the most advantageous placement of your D-Link wireless products.

3. Why does my wireless connection keep dropping?

If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether.

Try changing the channel on your router, access point and wireless adapter to a different channel to avoid interference.

Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, monitors, electric motors, etc.

4. Why can't I get a wireless connection?

If you have enabled encryption on the DWL-G680, you must also enable
encryption on all wireless devices in the network in order to establish a wireless connection.

Make sure that the encryption bit level/TYPE is the same on the AP/router and the DWL-G680.

Make sure that the SSID on the wireless router (if you have one in your network) and the DWL-G680 are exactly the same. If they are not,
wireless connection will not be established. The default SSID is **default**.

Technical Specifications

Standards	IEEE 802.11g IEEE 802.11b IEEE 802.1x
Diagnostic LEDs	Link Activity
Temperature	Operating: 0ºC to 55ºC (32ºF to 131ºF)
Humidity	10% - 90%, RH, non-condensing
External Antenna Type	Integrated Printed PCB antenna w/ dual diversity
Bus Type	32-bit Cardbus
Security	WEP 64/128bit WPA2-Personal (Coming Soon) WPA-Personal WPA2-Enterprise (Coming Soon) WPA-Enterprise
Data Rates	108, 54, 48, 36,24, 18, 11, 9, 6 5.5, 2, 1Mbps
Power Consumption	500mA at continuous transmit mode 30mA at sleep mode 300mA at continuous receive mode

Wireless Transmit Power	**802.11b:**
	        Typical 21dBm at 11, 5.5, 2 an 1Mbps
	802.11g:
	        Typical +15 - 18dBm for 54Mbps
	        Typical +16 - 19dBm for 48Mbps
	        Typical +17 - 20dBm for 36Mbps
	        Typical +18 - 21dBm for 24, 18, 12, 9, 6Mbps

Receiver Sensitivity	**802.11b:**
	     DQPSK
	     DBPSK
	     DSSS
	     CCK
	802.11g:
	     PSK
	     PSK
	     6QAM
	     FDM

Mean Time Before Failure	30,000 Hours
Physical Dimensions	L = 1.75 inches (44.6mm) W = 1.99 inches (50.75mm) H = 0.19 inches (5mm)
Weight	0.12 lb. (5.5g)
Warranty	1 year

Contacting Technical Support

You can find software updates and user documentation on the D-Link website.

D-Link provides free technical support for customers within the United States and within Canada for the duration of the warranty period on this product.

U.S. and Canadian customers can contact D-Link technical support through our web site, or by phone.

Tech Support for customers within the United States:

> *D-Link Technical Support over the Telephone:*
> (877) 453-5465
> Monday through Friday 8:00am to 5:00pm (PST)
> *D-Link Technical Support over the Internet:*
> http://support.dlink.com
> email:support@dlink.com

Tech Support for customers within Canada:

> *D-Link Technical Support over the Telephone:*
> (800) 361-5265
> Monday to Friday 7:30am to 12:00am EST
> *D-Link Technical Support over the Internet:*
> http://support.dlink.ca
> email:support@dlink.ca

When contacting technical support, please provide the following information:
- *Serial number of the unit*
- *Model number or product name*

Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited Warranty:

·   Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
·   Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty: D-Link warrants that the hardware portion of the D-Link product described below ("Hardware") will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below ("Warranty Period"), except as otherwise stated herein.

·   Hardware (excluding power supplies and fans): One (1) year
·   Power supplies and fans: One (1) year
·   Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty: D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty: The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim the3( )62.4wie125 TD7pecag

·   The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.

·   The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at https://rma.dlink.com/.

·   After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.

·   The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to **D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708**. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer.

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered: The Limited Warranty provided herein by D-Link does not cover: Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties: EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability: TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NON-CONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

Governing Law: This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

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CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures**:**

·   Reorient or relocate the receiving antenna.
·   Increase the separation between the equipment and receiver.
·   Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
·   Consult the dealer or an experienced radio/TV technician for help.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

Registration

Register your product online at:
http://support.dlink.com/register

Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

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